PYRETHRINS
GENERAL FACT SHEET

What are pyrethrins?

Pyrethrins are pesticides found naturally in some chrysanthemum flowers. They are a mixture of six chemicals that are toxic to insects. Pyrethrins are commonly used to control mosquitoes, fleas, flies, moths, ants, and many other pests.

Pyrethrins are generally separated from the flowers. However, they typically contain impurities from the flower. Whole, crushed flowers are known as pyrethrum powder.

Pyrethrins have been registered for use in pesticides since the 1950's. They have since been used as models to produce longer lasting chemicals called pyrethroids, which are man-made.

What are some products that contain pyrethrins?

Currently, pyrethrins are found in over 2,000 registered pesticide products. Many of these are used in and around buildings and on crops and ornamental plants. Others are used on certain pets and livestock. Pyrethrins are commonly found in foggers (bug bombs), sprays, dusts and pet shampoos. Some of these products can be used in organic agriculture. Pyrethrins are also found in some head lice products regulated by the Food and Drug Administration.

Always follow label instructions and take steps to minimize exposure. If any exposures occur, be sure to follow the First Aid instructions on the product label carefully. For additional treatment advice, contact the Poison Control Center at 1-800-222-1222. If you wish to discuss a pesticide problem, please call 1-800-858-7378.

How do pyrethrins work?

Pyrethrins excite the nervous system of insects that touch or eat it. This quickly leads to paralysis and ultimately their death. Pyrethrins are often mixed with another chemical to increase their effect. This second chemical is known as a synergist.

How might I be exposed to pyrethrins?

Exposure can occur if you breathe it in, get it on your skin or eyes, or eat it. For example, exposure can occur while applying sprays or dusts during windy conditions. This can also happen if you apply a product in a room that is not well ventilated. People using foggers may be exposed, especially if they come back too early or fail to ventilate properly. Exposure can also occur if you use a pet shampoo without wearing gloves. You can limit your exposure and reduce your risk by carefully following the label instructions.

What are some signs and symptoms from a brief exposure to pyrethrins?

In general, pyrethrins are low in toxicity to people and other mammals. However, if it gets on your skin, it can be irritating. It can also cause tingling or numbness at the site of contact.

Children who have gotten lice shampoo containing pyrethrins in their eyes have experienced irritation, tearing, burns, scratches to the eye, and blurred vision. When inhaled, irritation of the respiratory passages, runny nose, coughing, difficulty breathing, vomiting and diarrhea have been reported.

Dogs fed extremely large doses of pyrethrins have experienced drooling, tremors, uncoordinated movement, and difficulty breathing. Increased activity, exhaustion, convulsions, and seizures have also been reported with high doses.

When exposed to pyrethrins, people have reported some of the same symptoms that are associated with asthma. These include wheeze, cough, difficulty breathing, and irritation of the airways. However, research has not found a link between exposure to pyrethrins and the development of asthma or allergies.

What happens to pyrethrins when they enter the body?

When eaten or inhaled, pyrethrins are absorbed into the body. However, they are absorbed poorly by skin contact. Once inside, they are rapidly broken down into inactive products and are removed from the body. In a study with mice, more than 85 percent left the body in feces or urine within two days. Removal of pyrethrin 1, a major component of pyrethrins, from goats and hens was also very rapid. However, studies have found very small amounts in the milk and eggs of exposed animals.

Are pyrethrins likely to contribute to the development of cancer?

In two studies, mice and rats were fed low to high doses daily for 1.5 to 2 years. At the highest dose, some rats had an increased number of liver tumors. However, the changes in the liver leading to tumors only occurred above a certain threshold. Based on these studies, the EPA has classified pyrethrins as not likely to cause cancer. However, this rating is limited to doses below this threshold.

Has anyone studied non-cancer effects from long-term exposure to pyrethrins?

In separate studies, rats and dogs were fed low to moderate daily doses of pyrethrins for one to two years. At moderate doses, there were effects to the thyroid in rats and the liver in dogs. In another study, rats breathed in low to moderate doses daily for several months. At low doses, damage to tissue along the nasal and respiratory passages was observed. At moderate doses, lower body weights, difficulty breathing, and tremors were observed.

Scientists have also tested whether pyrethrins cause developmental or reproductive effects in rats and rabbits. In these studies, animals were fed low to moderate doses daily throughout their lives or during their pregnancies. Effects were only observed at moderate doses. These included lower body weights in some adult rats and their young. Drooling, unusual postures, and difficulty breathing were observed in one adult rabbit. Also, two rabbits lost their pregnancies. However, it is unclear if the lost pregnancies were related to pyrethrins. No effects were observed in rats or their young when fed solely during their pregnancies.

Are children more sensitive to pyrethrins than adults?

Children may be especially sensitive to pesticides compared to adults. However, there are currently no conclusive data showing that children have increased sensitivity specifically to pyrethrins.

What happens to pyrethrins in the environment?

In the presence of sunlight, pyrethrin 1, a component of pyrethrins, breaks down rapidly in water and on soil and plant surfaces. Half-lives are 11.8 hours in water and 12.9 hours on soil surfaces. On potato and tomato leaves, less than 3% remained after 5 days. Pyrethrins do not readily spread within plants.

In the absence of light, pyrethrin 1 breaks down more slowly in water. Half-lives of 14 to 17 days have been reported. When water was more acidic, pyrethrin 1 did not readily break down. Pyrethrins that enter the water do not dissolve well but tend to bind to sediment. Half-lives of pyrethrin 1 in sediment are 10.5 to 86 days.

Pyrethrins also stick to soil and have a very low potential to move through soil towards ground water. In field studies, pyrethrins were not found below a soil depth of 15 centimeters. However, pyrethrins can enter water through soil erosion or drift. In the top layers of soil, pyrethrins are rapidly broken down by microbes. Soil half-lives of 2.2 to 9.5 days have been reported. Pyrethrins have a low potential to become vapor in the air.

OSU Oregon State University

Can pyrethrins affect birds, fish, or other wildlife?

Pyrethrins are practically non-toxic to birds but highly toxic to honey bees. However, some of the risk to pollinators is limited by their slight repellent activity and rapid breakdown.

Pyrethrins are highly to very highly toxic to fish. They are also very highly toxic to lobster, shrimp, oysters, and aquatic insects. This may be partly due to their higher toxicity at lower temperatures. There is evidence that long term exposure to pyrethrins can cause reproductive effects in fish and aquatic insects. In separate studies, minnows and water fleas were exposed to very small amounts of pyrethrins for one month. Fewer minnow eggs hatched and fewer water flea young were produced.

Where can I get more information?

For more detailed information about pyrethrins please visit the list of referenced resources or call the National Pesticide Information Center, between 8:00 AM and 12:00 PM Pacific Time (11:00 AM to 3:00 PM Eastern Time), Monday - Friday, at 1-800-858-7378 or visit us on the web at http://npic.orst.edu. NPIC provides objective, science-based answers to questions about pesticides.

Date Reviewed: November 2014

SAFETY DATA SHEET

Version 3.10
Revision Date 02/27/2015
Print Date 03/02/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Pyrethrum extract

Product Number : 82670
Brand : Aldrich
Index-No. : 613-022-00-6

CAS-No. : 8003-34-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 3), H311
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H227	Combustible liquid.
H301 + H311	Toxic if swallowed or in contact with skin
H332	Harmful if inhaled.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P322	Specific measures (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

CAS-No. : 8003-34-7
EC-No. : 232-319-8
Index-No. : 613-022-00-6

Hazardous components

Component	Classification	Concentration
Pyrethrins including cinerins		
	Flam. Liq. 4; Acute Tox. 3; Acute Tox. 4; Acute Tox. 3; Aquatic Acute 1; Aquatic Chronic 1; H227, H301 + H311, H332, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nature of decomposition products not known.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2 - 8 °C

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Pyrethrins including cinerins	8003-34-7	TWA	5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lower Respiratory Tract irritation Liver damage Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Lower Respiratory Tract irritation Liver damage Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Pyrethrum is a variable mixture of Cinerin, Jasmolin, and Pyrethrin.		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Colour: dark brown
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	170 °C (338 °F) at 0.129 hPa (0.097 mmHg)
g)	Flash point	75 °C (167 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available

k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.92 - 0.94 g/cm3
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 200 mg/kg

LD50 Dermal - Rabbit - 300 mg/kg

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as

probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

Reproductive toxicity - Rat - Oral
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: UR4200000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.05 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia pulex (Water flea) - 0.02 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2810 Class: 6.1 Packing group: III

Proper shipping name: Toxic, liquids, organic, n.o.s. (Pyrethrins including cinerins)
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2810 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (Pyrethrins including cinerins)
Marine pollutant:yes
IATA
UN number: 2810 Class: 6.1 Packing group: III
Proper shipping name: Toxic liquid, organic, n.o.s. (Pyrethrins including cinerins)

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Pyrethrins including cinerins	8003-34-7	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Pyrethrins including cinerins	8003-34-7	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Pyrethrins including cinerins	8003-34-7	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Flam. Liq.	Flammable liquids
H227	Combustible liquid.
H301	Toxic if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin
H311	Toxic in contact with skin.

HMIS Rating
Health hazard: 3
Chronic Health Hazard: *
Flammability: 2
Physical Hazard 0

NFPA Rating
Health hazard: 3
Fire Hazard: 2
Reactivity Hazard: 0

Health hazard: 2
Fire Hazard: 2
Reactivity Hazard: 0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.10 Revision Date: 02/27/2015 Print Date: 03/02/2015

SAFETY DATA SHEET
Pyrethrum EWC

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name Pyrethrum EWC

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier

Agropharm Africa Limited
Muhe Village
Ruhengeri Cellule
Muhoza Sector, Musanze District
Northern Province
Rwanda
+250 252 546 357
+250 788 384 846

1.4. Emergency telephone number

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (1999/45/EEC) N;R50/53.

2.2. Label elements

Contains POTASSIUM SORBATE

Labelling

Dangerous for the environment

Risk Phrases

R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases

S29	Do not empty into drains.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

ALKYL POLYGLYCOSIDE **1-5%**

CAS-No.: 68515-73-1 **EC No.:**

Classification (EC 1272/2008)	Classification (67/548/EEC)
Not classified.	Xi;R41.

POTASSIUM SORBATE **< 1%**

CAS-No.: 24634-61-5 **EC No.: 246-376-1**

Classification (EC 1272/2008)	Classification (67/548/EEC)
Not classified.	Xi;R36/37/38.

PYRETHRINS INCLUDING CINERINS **1-5%**

CAS-No.: 8003-34-7 **EC No.: 232-319-8**

Classification (EC 1272/2008)	Classification (67/548/EEC)
Acute Tox. 4 - H302	Xn;R20/21/22.
Acute Tox. 4 - H312	N;R50/53.
Acute Tox. 4 - H332	
Aquatic Acute 1 - H400	
Aquatic Chronic 1 - H410	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

Ingestion

Immediately rinse mouth and provide fresh air. DO NOT induce vomiting. Get medical attention immediately.

Skin contact

Wash skin thoroughly with soap and water. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

Eye contact

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Continue to rinse for at least 15 minutes and get medical attention. Contact physician if discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Water spray, foam, dry powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards

No unusual fire or explosion hazards noted.

Specific hazards

When heated and in case of fire, toxic vapours/gases may be formed. When heated and in case of fire, irritating vapours/gases may be formed.

5.3. Advice for firefighters

Special Fire Fighting Procedures

Keep run-off water out of sewers and water sources. Dike for water control. Dike and collect extinguishing water. If risk of water pollution occurs, notify appropriate authorities.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing as specified in section 8.

6.2. Environmental precautions

Avoid discharge to the aquatic environment.

6.3. Methods and material for containment and cleaning up

Absorb spillage with suitable absorbent material. Collect in containers and seal securely.

6.4. Reference to other sections

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid spilling, skin and eye contact.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and animal feeding stuffs. Store in tightly closed original container in a dry and cool place.

7.3. Specific end use(s)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
PYRETHRINS INCLUDING CINERINS	WEL		1 mg/m3			

WEL = Workplace Exposure Limit.

8.2. Exposure controls

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Creamy liquid.
Colour	Cream.
Odour	Characteristic.
Solubility	Miscible with water
Relative density	0.98-0.99
pH-Value, Conc. Solution	6.5
pH-Value, Diluted Solution	7.8 (Diluted 1:40 Tap Water)
Flash point	> 80 CC (Closed cup).

9.2. Other information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Hazardous Polymerisation

Will not polymerise.

10.4. Conditions to avoid

10.5. Incompatible materials

10.6. Hazardous decomposition products

When heated, toxic and corrosive vapours/gases may be formed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxic Dose 1 - LD 50

Pyrethrins: 900-2000 mg/kg (oral rat)

Inhalation

May cause irritation to the respiratory system.

Ingestion

May cause irritation to throat and stomach.

Skin contact

Liquid may irritate skin. Prolonged contact may cause redness, irritation and dry skin.

Eye contact

May cause temporary eye irritation.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

The product contains a substance which is harmful to aquatic organisms.

12.1. Toxicity

12.2. Persistence and degradability

12.3. Bioaccumulative potential

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements. Do not allow runoff to sewer, waterway or ground.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN No. (ADR/RID/ADN)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082

14.2. UN proper shipping name

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

14.3. Transport hazard class(es)

ADR/RID/ADN Class 9

ADR/RID/ADN Class Class 9: Miscellaneous dangerous substances and articles.

ADR Label No. 9

IMDG Class 9

ICAO Class/Division 9

Transport Labels

14.4. Packing group

ADR/RID/ADN Packing group III

IMDG Packing group III

ICAO Packing group III

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant

14.6. Special precautions for user

EMS F-A, S-F

Emergency Action Code •3Z

Hazard No. (ADR) 90

Tunnel Restriction Code (E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2. Chemical Safety Assessment

SECTION 16: OTHER INFORMATION

Date 26/September/2012

Risk Phrases In Full

R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard Statements In Full

H332	Harmful if inhaled.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H410	Very toxic to aquatic life with long lasting effects.
H400	Very toxic to aquatic life.